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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/945,193	08/31/2001	Henri Jacques Suermondt	10007972	4497

7590 01/29/2007

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EXAMINER	
JARRETT, SCOTT L	
ART UNIT	**PAPER NUMBER**
3623	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/945,193	SUERMONDT ET AL.	
	Examiner	Art Unit	
	Scott L. Jarrett	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *28-46 and 48-54* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *28-46 and 48-54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Final Office Action is in response to Applicant's amendment filed November 22, 2006. Applicant's amendment amended claims 28-46 and 48-54 and canceled claim 47. Currently claims 28-46 and 48-54 are pending.

Response to Amendment

2. The 35 U.S.C. 101 rejection of Claims 43-54 is withdrawn in response to Applicant's amendments to claims 43-46 and 48-54.

The 35 U.S.C. 112 (2) rejection of claims 43-54 is withdrawn in response to Applicant's amendments to claims 43-46 and 48-54.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action.

Response to Arguments

3. Applicant's arguments with respect to claims 28-46 and 48-54 have been considered but are moot in view of the new ground(s) of rejection.

It is noted that the applicant did not challenge the officially noticed facts cited in the previous office action(s) therefore those statements as presented are herein after prior art. Specifically it has been established that it was old and well known in the art at the time of the invention:

- to automate a manual method/process;

- to track parts through all stages (statuses, availability, etc.) of the parts (materials, components, items, kits, etc.) life cycle wherein the tracking provides a plurality of information that enables businesses to do such things as improve the system's ability to estimate (determine, predict, forecast, etc.) stocking/inventory levels;

- to utilize averages to represent/generalize numbers and/or using averages when individual/specific data is unavailable;

- to utilize performance evaluations to identify and implement training for employees (staff, personnel, etc.) wherein the evaluations assist in the selection and/or development of training to address identified areas requiring improvement;

- to identify/flag information that the business/system deems important (relevant, necessary, required, etc.) for users to consider (review, view, etc.); and

- to carry/transport service parts (tools, kits, items, components, supplies, materials, etc.) utilizing a repair vehicle (can, van, truck, etc.) wherein the vehicle(s) provides a convenient method for transporting the technician to/from the repair site.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 28-30, 37, 42-43 and 48-49 are rejected under 35 U.S.C. 102(b) as being anticipated by Orsburn, Douglas K., Spares Management Handbook (1991).

Regarding Claim 28, 43 and 48 Orsburn teaches a method and system for spares management comprising (Pages 172-173, 193-193, 199-202, 263-265; Figures 7-1, 7-5, 7-6, 9-1, 9-2, 13-2; Tables 3-1, 3-2, 9-1):

- determining a cost (financial, used/unused parts, resource, time, waste metric, etc.) of mis-predicting each of a set of parts (kits, stock-out, shortage, etc.) that may be replaced during an onsite repair of a product (equipment, item, device, appliance, etc.) in response to a repair history ("There is no one method for forecasting that can accurately predict future requirements. One method is to use past experience or the most recent reliability data and actual usage information to project the anticipated number of spares that will be required.", Paragraph 2, Page 172; Bullets 1-5, Paragraph 2, Page 173; "Prediction can also be accomplished from equipment part counts. Failure rates are assigned and combined to provide a predicted MTBF at the system Level.", Paragraph 2, Page 174; "These parameters represent the probability that no corrective maintenance or unscheduled supply demand will occur following the completion of a

specific mission profile.", Paragraph 3, Page 174; Numbers 1-2, Page 174; Last Paragraph 176; Page 178; "The operating hours and reliability of parts has a direct correlation with the number of system stock spare parts and repair parts required to supply the system/equipment.", Last Paragraph, Page 179; "Any manufactured product requires spare parts to replace worn out or failed components. The success of an item benefits from thorough and accurate failure analysis and subsequent projection of failures and failure frequencies. The failure frequency is particularly important because it determines the quantity of spare parts based on the operational availability desired for the product. An accurate analysis of a product through support analysis program establishes projected failures and identifies the necessary tools and spare parts needed to achieve the desired operational availability." Paragraphs 1-3, Page 193; Last Two Paragraphs, Page 198; "Determining spare part quantities", Page 199; Pages 201-203; "Spares order range and depth support items", Pages 212-213; "Forecasting", Page 247; "The key elements to consider in forecasting are the usage rates (natural failures + induced failures + misdiagnosis failures + received failures), system usage and quantity per system. During early stages of a program, additional adjustment factors can be used, including reliability growth, usage profile, secondary failures, user-responsibility failures, learning curves and wear out.", Paragraph 3, Page 247; Figures 7-1, 7-2, 7-5, 7-6, 9-1; Table 9-1);

- selecting a subset of the parts to be sent to the onsite repair in response to the costs (Recommended spare parts list, Paragraph 1, Page 187; Paragraphs 1-3, Page 193; "Determining spare part quantities", Page 199; "When determining spare part

quantities, consider operational requirements (e.g. system effectiveness, availability) and establish the appropriate level at each location where corrective maintenance is accomplished.", Paragraph 4, Page 199; Pages 201-202; "Provisioning Parts List", Paragraph 6, Page 203; "Spares order range and depth support items", Pages 212-213; "Initial replenishment items", Page 214; "Cost constraints", Page 249; "Stocks", Page 251; Figures 9-1, 9-2).

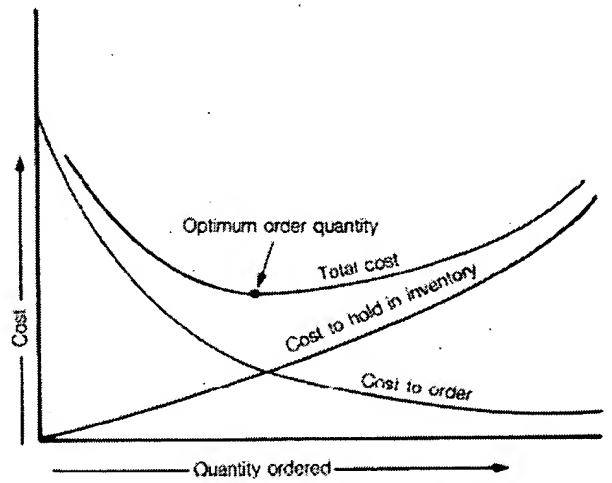


Fig. 7-5. EOQ low-cost principle.

$$EOQ = \frac{\sqrt{2\,C_o D}}{C_i} \qquad N = \frac{D}{EOQ}$$

Where: Co = Cost to order
D = Demands per year
C_i = Cost to hold in inventory
N = Number of orders per year

Fig. 7-6. EOQ formula.

$$p = \sum_{n=0}^{n=s} \left[\frac{(R)[-K\,(\ln R)^n]}{n!} \right]$$

Where:
P = probability of having a spare of a particular item available when required.
S = number of spare parts carried in stock.
R = composite reliability (probability of survival); $R = e - n\lambda t$
K = quantity of parts used of a particular type.
lnR = natural logarithm of R

Fig. 9-1. Poisson distribution formula.

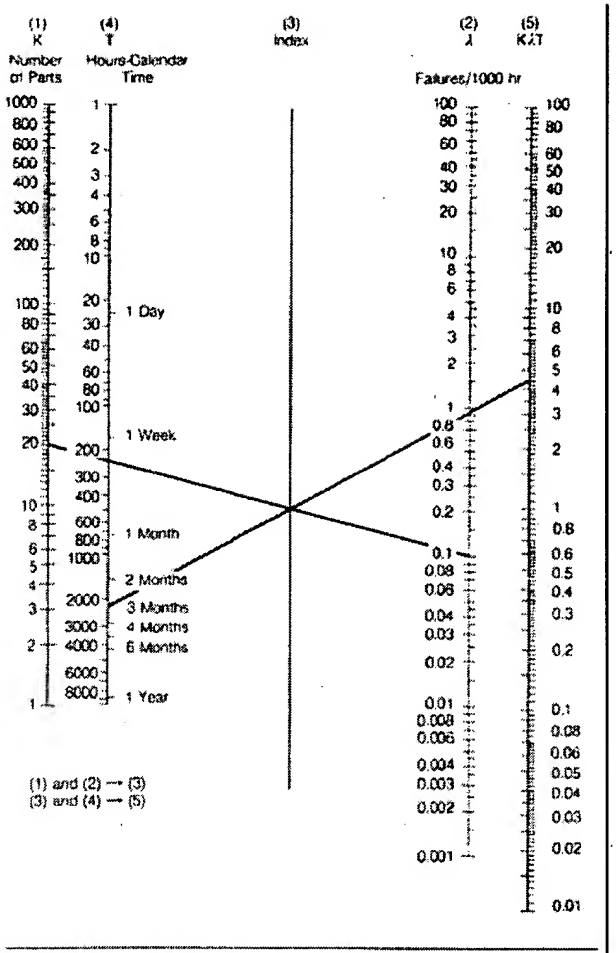
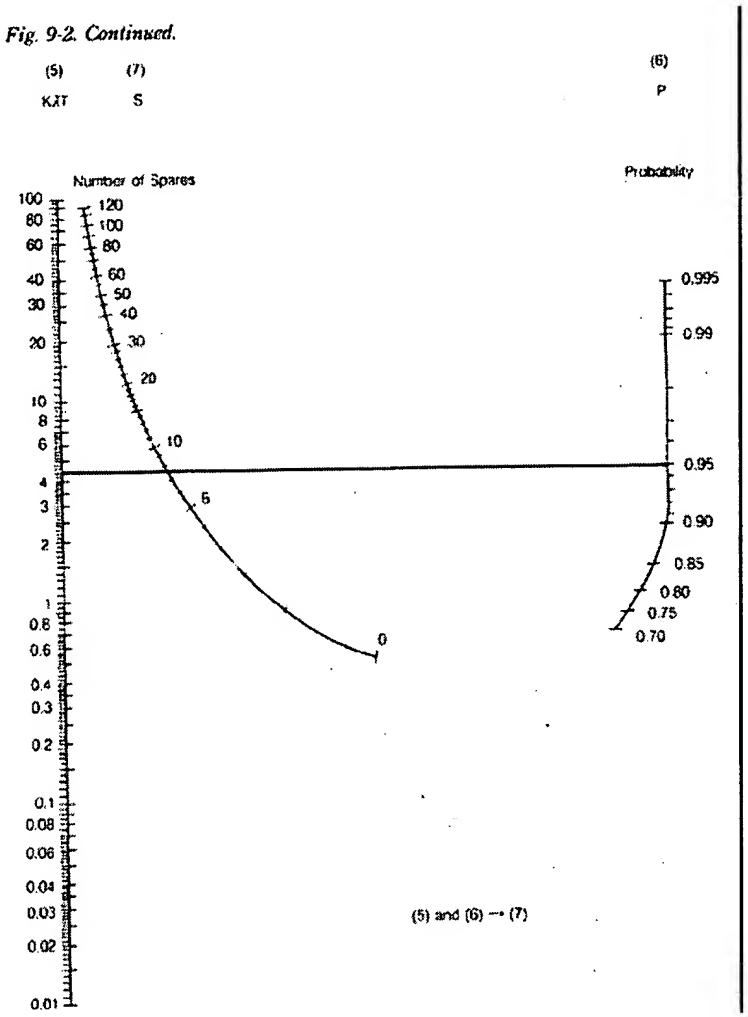


Fig. 9-2. Nomograph sheets.



Regarding Claim 29 Orsburn teaches a spares management system and method wherein determining a cost (availability, downtime, reliability, delay, etc.) further includes determining a cost associated with unnecessarily sending (stocking, inventorying, excess inventory, etc.) a part to the onsite repair (Page 29; "Forecasting", Page 247; Paragraph 1, Page 175; Pages 178-179; "Determining spare part quantities", Pages 199-202; Bullet 2, Figure 7-1; P, K, Figure 9-1; Figures 7-5, 9-2).

Regarding Claim 30 Orsburn teaches a spares management system and method wherein determining a cost includes determining a cost associated with not sending (stock-out, shortage, inventory cost, order cost, etc.) a part when needed to the onsite repair (Pages 178-179; "Determining spare part quantities", Pages 199-202; Figures 7-5, 9-1, 9-2).

Regarding Claims 37 and 49 Orsburn teaches a spares management system and method wherein selecting a subset of the parts includes selecting a subset of the parts for transport to the onsite repair (operational site, organizational maintenance, "Mobile Units", "Maintenance Levels"; Paragraph 3, Page 18; Pages 34-37; Bullet 10, Page 104; Last Paragraph, Page 105; Table 3-1; Figures 13-1, 13-2).

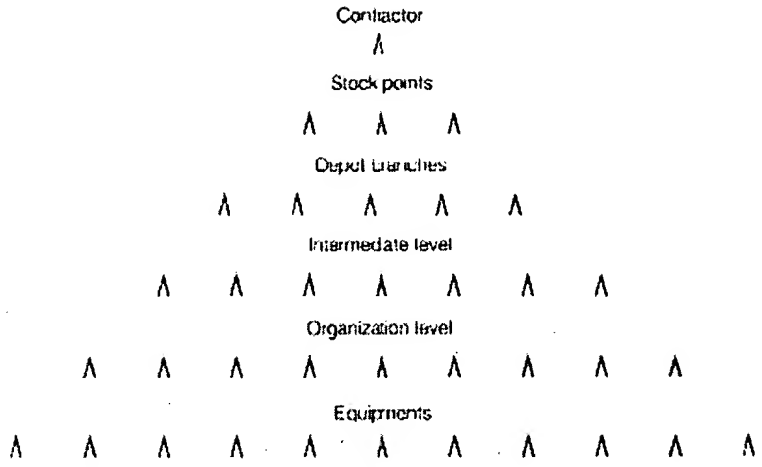


Fig. 13-1. Typical pyramid organizations of inventory locations.

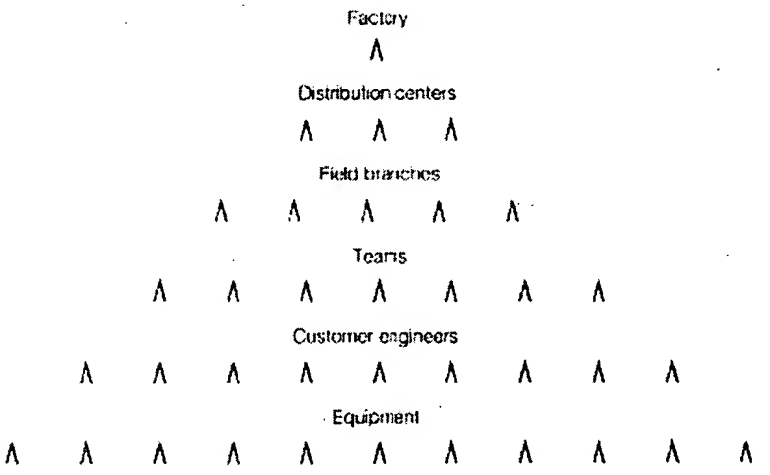


Fig. 13-2. Commercial pyramid organization.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 33-36 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orsburn, Douglas K., Spares Management Handbook (1991) as applied to claims 28 and 43 above and further in view of Mamer, John W. et al., Job Completion Based Inventory Systems: Optimal Policies for Repair Kits and Spare Machines (1985).

Regarding Claims 33 and 44 Orsburn does not expressly teach determining a cost wherein the cost includes: determining a number of times that each part was under-predicted, over-predicted and correctly predicted as claimed.

Mamer et al. teach a method for predicting a set of parts for an onsite repair wherein the cost includes determining a number of times that each part was under-predicted (shortage, stock-out, out-of-stock, backorder, etc.) and a number of times that each part was over-predicted (excess, surplus, etc.) and determining a number of times that each part was correctly predicted (supply met demand, parts usage, fraction part needed for each job type, part usage probabilities, backorder, loss demand, etc.; Last Paragraph, Page 704; Paragraph 1, and Last Two Paragraphs, Page 705; Paragraphs 1-3, Page 706; Tables 1-2; Figures 2-3) in an analogous art of spares management for

the purposes of determining the optimal stock/inventory (mix and levels) of spares at each stocking location/repair kit (Abstract; Conclusion, Last Two Paragraphs, Page 717).

More generally Mamer et al. teach a method for predicting a set of parts for an onsite repair comprising:

- determining a cost of mis-predicting (over/under forecast/estimate, overstock, under stock, surplus, excess, stock out, shortage, incomplete job, fill-rate, service level, lost demand, backorder, etc.; "If any required part or tool is not in the repair kit, the repair job is broken. The penalty or inconvenience cost is assumed to be proportional...", Abstract; Paragraph 1, Page 703; "L=penalty cost for a broken (incomplete) job", Line 3, Page 705; Paragraph 4, Page 705; Paragraphs 4-5, Page 712; Figures 2-3; Equation 2.2) each of a set of parts that may be replaced during the onsite repair in response to a repair history ("the frequencies can be estimated from historical job data", Paragraphs 2-3, Page 706; Tables 1-2);

- selecting the parts in response to the costs (optimal kit; Abstract; Paragraph 1, Page 704; Equation 2.4);

- wherein the costs include a cost associated with unnecessarily sending the corresponding part to the repair site (unused parts, inventory holding cost, carrying cost, etc.; e.g. business analyzing "standard exchange curve" which depict the trade-offs between different part inventory policies/repair kits; cost (of sending a part that is not needed) vs. performance (success/fill rate) analysis; Last Paragraph, Page 705; Paragraph 4, Page 708; Equations 2.2, 2.6);

- wherein the costs include a cost associated with not sending the corresponding part when needed to the onsite repair (incomplete/broken job, shortage, penalty/inconvenience cost, etc.; Last Paragraph, Page 705; Paragraphs 1-6, Page 706; Paragraph 1, Page 707; Paragraph 4, Page 708; Equations 2.2, 2.6);

- wherein the parts are selected for transport to the onsite repair (field service/repair; Abstract; Last Paragraph, Page 703; "Thus the kit inventories can be viewed as an additional inventory investment whose purpose is to achieve a certain job completion rate on field repair calls", Paragraph 1, Page 705; Paragraphs 2-4, Page 716);

- repair history that includes information pertaining to a set of prior onsite repairs (Paragraphs 1-5, Page 706; Tables 1-2);

- determining a waste metric for each part in response to the repair history and cost data (Paragraphs 1-5, Page 706; Equations 2.5-2.6; Paragraphs 1-4 and Last Paragraph, Page 707; Paragraphs 1-5, Page 711; Equation 2.6 Tables 1-2; Figures 2-3);

- selects a set of parts for the onsite repair based on the repair history, cost data and/or waste metric (optimal kit; Paragraphs 2-6, Page 706; Paragraph 1, Page 707; Equation 2.6); and

- determining which parts are least desirable to support (carry) based on the trade-off analysis between the cost and the performance of the part (parts preference ordering/ ranking; Paragraphs 1 and 4-5, Page 708; Last Paragraph, Page 711; Equation 3.3; Tables 1-2).

It would have been obvious to one skilled in the art at the time of the invention that the spares management system and method as taught by Orsburn would have benefited from determining a number of times that each part was under-predicted, over-predicted and correctly predicted in view of the teachings of Mamer et al.; the resultant system/method enabling businesses to determine the optimal stock/inventory (mix and levels) of spares at each stocking location/repair kit (Mamer et al.: Abstract; Conclusion, Last Two Paragraphs, Page 717).

Regarding Claims 34-35 Orsburn does not expressly teach combining the number of times with a cost associated with under or over-predicting parts or determining the costs associated with under or over-predicting parts as claimed.

Mamer et al. teach a method for predicting a set of parts for an onsite repair wherein the cost includes combining the number of times with a cost associated with under-predicting and over-predicting parts (Paragraphs 1-5, Page 705; Equations 2.2, 2.6) and predicting a set of parts for an onsite repair further comprising determine the costs associated with under and over-predicting parts (Paragraphs 1-5, Page 705; Equations 2.2, 2.6) in an analogous art of spares management for the purposes of determining the optimal stock/inventory (mix and levels) of spares at each stocking location/repair kit (Mamer et al.: Abstract; Conclusion, Last Two Paragraphs, Page 717).

It would have been obvious to one skilled in the art at the time of the invention that the spares management system and method as taught by Orsburn would have benefited from combining the number of times with a cost associated with under-predicting and over-predicting parts in view of the teachings of Mamer et al.; the resultant system/method enabling businesses to determine the optimal stock/inventory (mix and levels) of spares at each stocking location/repair kit (Mamer et al.: Abstract; Conclusion, Last Two Paragraphs, Page 717).

Regarding Claim 36 Orsburn does not expressly teach determining an average cost associated with over-predicting and under-predicting the parts as claimed.

Official notice is taken that utilizing averages to represent/generalize numbers and/or using averages when individual/specific data is unavailable is old and well known in the art.

It would have been obvious to one skilled in the art at the time of the invention that the method for predicting/optimizing the parts needed for a repair, with its ability to associate and determine costs for each part in each technician's inventory, as taught by the combination of Orsburn and Mamer et al. would have benefited from utilizing average costs in view of the teachings of official notice; the resultant system using average costs to predict/optimize parts needed for a repair thereby simplifying the

calculations that need to be made and/or reducing the amount of information required to be maintained by not requiring the user/business to track (associate, determine, etc.) costs for each part inventoried by each technician.

Regarding Claim 46 Orsburn teaches a spares management system and method further comprising tracking and analyzing parts usage, failures and equipment repair histories (Pages 193-194, 199-201, 212, 251; Figures 9-1, 9-2).

Orsburn does not expressly teach that a repair history includes an identification of the parts sent to a set of prior onsite repairs and a list of actual parts needed in the prior repairs.

Mamer et al. teach a method for predicting a set of parts for an onsite repair wherein the repair history includes an identification of a set of parts sent to the prior onsite repairs and a list of actual parts needed in the prior onsite repairs (Last Two Paragraphs, Page 710; Paragraphs 1-5, Page 711; Section 7, Pages 716-717; Last Paragraph, Page 717) in an analogous art of spares management for the purposes of determining the optimal stock/inventory (mix and levels) of spares at each stocking location/repair kit (Mamer et al.: Abstract; Conclusion, Last Two Paragraphs, Page 717).

It would have been obvious to one skilled in the art at the time of the invention that the spares management system and method as taught by Orsburn would have benefited from identifying the parts sent to a set of prior onsite repairs and a list of actual parts needed the repairs in view of the teachings of Mamer et al.; the resultant system/method enabling businesses to determine the optimal stock/inventory (mix and levels) of spares at each stocking location/repair kit (Mamer et al.: Abstract; Conclusion, Last Two Paragraphs, Page 717).

8. Claims 31-32, 38-39, 42, 45, 50-51 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orsburn, Douglas K., Spares Management Handbook (1991) as applied to claims 28 and 43 above and further in view of Patton et al., Service Management Principles and Practices (1994).

Regarding Claim 31 Orsburn teaches a spares management system and method further comprising identifying a set of repair/maintenance requirements, procedures and failure/repair analysis associated with the product (logistics support analysis, repair level analysis, source, maintenance and recoverability codes, SMR, maintenance concept, failure analysis, trending, predictive maintenance, etc.; Last Paragraph, Page 7; Paragraphs 1-2, Page 16; Page 21; Numbers 1-6, Page 26; Paragraph 1, Page 34; Paragraphs 2-4, Page 38; Last Two Paragraphs, Page 114; Figures 3-1, 3-2, 6-3, 6-5).

Orsburn does not expressly teach identifying a set of symptoms as claimed.

Patton et al. teach identifying a set of symptoms associated with a product (i.e. diagnostics, troubleshooting, predictive maintenance, etc.; Pages 130-33, 136-139; Paragraphs 4-5, Page 198; Last Paragraph, Page 1999; Figures 9-1, 9-7; Tables 7-1, 9-1) in an analogous art of service management for the purposes of ensuring that "A service technician dispatched to a specific location to repair a specific piece of equipment can know exactly what is to be repaired and exactly what tools, test equipment and parts to take along" (Last Paragraph, Page 199).

More generally Patton et al. teach a system and method for service management comprising:

- predicting parts for an onsite repair in response to a plurality of information including but not limited to service/repair history (service forecasting, predictive maintenance, etc.; Figure 5-1; Table 5-1; Pages 72-73; Paragraph 1, Page 139; Last Paragraph, Page 163; "A good support system proactively determines what parts will probably be required and delivers those parts to meet the technician.", Paragraph 1, Page 198; Figures 9-1, 9-7; Tables 9-1, 9-2);

- utilizes averages when analyzing time series data ("Moving averages are better for time series analysis than are single point estimates", Paragraph 2, Page 73);

- parts inventory management based on repair history (part usage, failure probabilities, etc.) and other service data (Pages 146-148);

- service call management ("The call management organization acts as the heart of the service operation function. Its purpose is to validate customer status, determine the real customer needs, assign priorities and pass the call to the person best qualified to help the caller.", Paragraphs 4-5, Page 198);

- configuration management ("the service organization is completely aware of the exact configuration of each piece of equipment required to service. A service technician dispatched to a specific location to repair a specific piece of equipment can know exactly what is to be repaired and exactly what tools, test equipment and parts to take along.", Last Paragraph, Page 199).

- capturing, storing, analyzing and reporting on a plurality part service data including but not limited to part usage repair costs, technician performance, product/equipment performance, preventive metrics and the like (parts per unit repair, no trouble found, actual vs. estimated, first call fix rate, callback rate, attempts per incident, call duration, etc.; Performance Measurement and Reporting, Pages 44-48, 50-51; Table 3-2; "Percentage of required parts on hand, equipment down waiting for parts and parts turnover rates are useful measures for individual technicians.", Last Paragraph, Page 51);

- flagging repairs/service information to indicate/alert users to one or more conditions/information (corrective maintenance, alerts, condition monitoring; Last Paragraph, Page 196; Paragraph 1, Page 197; Last Paragraph, Page 142; Figure 9.1);

- identifying training needs and providing individualized training based on observed/measure performance metrics (Pages 44-48; Last Paragraph, Page 117; Paragraph 2, Page 124); and

- automating service part management utilizing computers (information systems, apparatus, etc.; "Most service parts are low usage and are best forecast by humans with computerized historical data and information on expected market demand and technical supply.", Paragraph 1, Page 164; Information Systems, Pages 242-249).

It would have been obvious to one skilled in the art at the time of the invention that the spares management system and method as taught by Orsburn would have benefited from identifying a set of symptoms associated with a product in view of the

teachings of Patton et al.; the resultant system/method enabling business to ensure that "A service technician dispatched to a specific location to repair a specific piece of equipment can know exactly what is to be repaired and exactly what tools, test equipment and parts to take along." (Patton et al.: Last Paragraph, Page 199).

Regarding Claims 32 and 45 Orsburn teaches a spares management system and method further comprising identifying a cost in response to the repair/maintenance operations/activities (repair time, repair items, spare parts, required repair resources, etc; Last Paragraph, Page 7; Paragraphs 1-2, Page 16; Page 21; Numbers 1-6, Page 26; Paragraph 1, Page 34; Paragraphs 2-4, Page 38; Last Two Paragraphs, Page 114; Figures 3-1, 3-2, 6-3, 6-5).

Orsburn does not expressly teach identifying costs associated with symptoms as as claimed.

Patton et al. teach identifying a set of symptoms associated with a product (i.e. diagnostics, troubleshooting, predictive maintenance, etc.; Pages 130-33, 136-139; Paragraphs 4-5, Page 198; Last Paragraph, Page 199; Figures 9-1, 9-7; Tables 7-1, 9-1) in an analogous art of service management for the purposes of ensuring that "A service technician dispatched to a specific location to repair a specific piece of equipment can know exactly what is to be repaired and exactly what tools, test equipment and parts to take along" (Last Paragraph, Page 199).

It would have been obvious to one skilled in the art at the time of the invention that the spares management system and method as taught by Orsburn would have benefited from identifying a set of symptoms associated with a product in view of the teachings of Patton et al.; the resultant system/method enabling business to ensure that "A service technician dispatched to a specific location to repair a specific piece of equipment can know exactly what is to be repaired and exactly what tools, test equipment and parts to take along." (Patton et al.: Last Paragraph, Page 199).

Regarding Claims 38 and 50 Orsburn teaches a spares management system and method further comprising training personnel associated with the maintenance/repair of the product (Paragraph 6, Page 2; Last Paragraph, Page 10; Paragraph 1, Bullet 6, Page 104; Paragraph 2, Page 106; Last Two Paragraphs, Page 136; Bullet 1, Page 137).

Orsburn does not expressly teach selecting a subset of parts for training of a call qualifier as claimed.

Patton et al. teach providing general and individualized training to a plurality of users (technicians, service center representatives, call qualifiers, etc.) based on a plurality of monitored human performance metrics (accuracy, completeness, response time, productive time, productivity, effectiveness, etc.) and test/examinations (Page 48;

Paragraph 2, Page 53; Service Training, Pages 117-125; Table 3-2) in an analogous art of service management for the purposes improving the users and business's performance as well as the customer's satisfaction (Paragraph 2, Page 53).

It would have been obvious to one skilled in the art at the time of the invention that the spares management method and system as taught by Orsburn would have benefited from selecting the parts for which training of call qualifiers (i.e. identifying training requirements/opportunities) in view of the teachings of Patton et al. the resultant system/method improving the users and business's performance as well as the customer's satisfaction (Patton et al.: Paragraph 2, Page 53).

Regarding Claims 39 and 51 Orsburn does not expressly teach selecting a subset of parts for flagging to call qualifiers as claimed.

Patton et al. teach flagging repairs/service information to indicate/alert users to one or more service/repair conditions/information/needs (corrective maintenance, alerts, condition monitoring; Last Paragraph, Page 196; Paragraph 1, Page 197; Last Paragraph, Page 142; Figure 9.1) in an analogous art of service management for the purposes of alerting users to potential maintenance/service needs (Last Paragraph, Page 142; Paragraph 1, Page 143).

It would have been obvious to one skilled in the art at the time of the invention that the spares management system and method as taught by Orsburn would have benefited from flagging/identifying parts/service requirements/needs to users in view of the teachings of Patton et al. the resultant system/method alerting users to potential maintenance/service needs (Patton et al.: Last Paragraph, Page 142; Paragraph 1, Page 143).

Regarding Claims 42 and 54 Orsburn teaches a spares management system and method further comprising training personnel associated with the maintenance/repair of the product, as discussed above.

Orsburn does not expressly teach determining which personnel to target for additional training in response to the costs as claimed.

Patton et al. teach providing general and individualized (targeted) training to a plurality of users (technicians, service center representatives, call qualifiers, etc.) based on a plurality of monitored human performance metrics (accuracy, completeness, response time, productive time, productivity, effectiveness, etc.) and test/examinations (Page 48; Paragraph 2, Page 53; Service Training, Pages 117-125; Table 3-2) in an analogous art of service management for the purposes improving the users and business's performance as well as the customer's satisfaction (Paragraph 2, Page 53).

It would have been obvious to one skilled in the art at the time of the invention that the spares management system and method as taught by Orsburn would have benefited from selecting the parts for which training of call qualifiers (i.e. identifying training requirements/opportunities) in view of the teachings of Patton et al. the resultant system/method improving the users and business's performance as well as the customer's satisfaction (Patton et al.: Paragraph 2, Page 53).

9. Claims 33-36 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orsburn, Douglas K., Spares Management Handbook (1991) as applied to claims 28 and 43 above and further in view of Graves, Stephen, A Multiple-Item Inventory Model With A Job Completion Criterion (PTO-892 mailed April 14, 2006, reference u3).

Regarding Claims 40 and 52 Orsburn teaches a spares management system and method further comprising selecting a subset of parts (stock, inventory, spares) to stock all the levels in a multi-level spares/repair network including "mobile units" (vans, trucks, etc.; Page 35; "Maintenance Levels", Pages 34-37, 193, 210-211; Last Three Paragraphs, Page 199; Table 3-1).

Orsburn does not expressly teach stocking a vehicle as claimed.

Graves teaches determining a subset of parts that a service representative should carried, inherently in some sort of vehicle/mode of transportation, for an on-site repair wherein the method determines the "optimal mix of components to be carried by a service representative in order to achieve a desired job completion rate." (Paragraph 1, Page 1334; "An important problem for the service organization is the determination of the spares parts inventory to be carried by each service technician. This note presents a model for finding the spare parts kit that has the minimum inventory investment for a specified job completion criterion.", Abstract) in an analogous art of spares management for the purposes of determining the optimal mix and level of spare parts (repair items)

and/or tools service technicians should transport to on-site repairs (Abstract; Paragraph 1, Page 1334).

More generally Graves teach a spares parts inventory and stocking method comprising: determining a cost (financial, used/unused parts, resource, time, waste metric, etc.) of mis-predicting each of a set of parts (kits, stock-out, shortage, etc.) that may be replaced during an onsite repair of a product and selecting a subset of the parts to be sent to the onsite repair in response to the costs (Paragraph 2, Page 1334; Paragraphs 1-3, Page 1335).

It would have been obvious to one skilled in the art at the time of the invention that the spares management system and method as taught by Orsburn would have benefited from having the technician utilize a vehicle to transport/carry the parts necessary for a repair in view of the teachings of Graves; the resultant system and method enabling businesses to determine the optimal mix and level of spare parts (repair items) and/or tools service technicians should transport to on-site repairs (Graves: Abstract; Paragraph 1, Page 1334).

10. Claims 41 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orsburn, Douglas K., Spares Management Handbook (1991) as applied to claims 28 and 43 above and further in view of Glovitz et al., U.S. Patent No. 5,682,421.

Regarding Claims 41 and 53 Orsburn does not expressly teach determining which products are least desirable to support as claimed.

Glovitz et al. inherently teach determining which products are no longer desirable to support wherein the system determines the reliability and/or profitability of equipment (product, item, etc.) utilizing information collected during the repair process, in an analogous art of service/repair management (i.e. unprofitable and/or unreliable products being inherently undesirable to keep/support; Column 1, Lines 50-61).

More generally Glovitz et al. teach a method and system for managing the repair of field equipment wherein service requests are made/received, technicians are assigned/dispatched and repairs are made/completed (Abstract; Column 1, Lines 29-61) comprising:

- identifying a set of symptoms (failure type/mode, nature of the malfunction, etc.) for the purposes of accepting and appropriately assigning service requests based on the symptoms, technician skill level and other factors (nature of the repair/failure; Column 1, Lines 41-60; Column 2, Lines 42-53; Column 10, Lines 36-44; Column 14, Lines 20-25; Table 1, Fields 5 and 27-28);

- analyzing a repair history for the product (item, equipment, etc.) for the purposes of diagnosing (classifying, qualifying, understanding, etc.) the nature of the service/repair request (Column 1, Lines 41-60; Column 2, Lines 42-53; Column 10, Lines 36-44; Column 14, Lines 20-25; Table 1, Fields 5 and 27-28);

- tracking and controlling the inventory of repair parts, specifically the tracking of used repair parts for billing and other purposes; and

- utilizing service/repair information (call records, parts used, etc.) to evaluate the performance of technicians ("Data collected for inventory usage and service of specific copiers may be used to evaluate equipment reliability and profitability. The data may also be used to evaluate a technician's performance.", Column 1, Lines 50-61).

It would have been obvious to one skilled in the art at the time of the invention that the spares management system and method as taught by Orsburn would have benefited from determining the profitability and/or reliability of the products being repaired in view of the teachings of Glovitz et al.; the resultant system/method enabling users to minimize costs by eliminating parts/products that are no longer desirable to stock/carry/support (Glovitz et al.: Column 1, Lines 50-61).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Huang et al., U.S. Patent No. 5,953,707, teaches a system and method for managing a repair supply chain network.

- Teachey, What Is A CMMS, And Why Should You Care? (1998), teaches the utilization of computerized maintenance management systems wherein CMMS typically comprise: work order management and administration, resource scheduling, repair history analysis (e.g. determine "type of maintenance you need for any asset during a

set time as well as the conditions that precipitated the maintenance."), spares/repair item inventory management and parts procurement/purchasing.

- Lamendola, Beyond Work Orders: Get More from Your CMMS (1999), teaches the well known utilization of computerized maintenance management systems wherein these systems include support for predictive and preventative maintenance such as equipment repair histories ("Over time, each asset has its own time line, detailing the history and tracking the cost of the repair...This historical information allows you to compare the costs of maintaining a piece of equipment versus replacing it."), equipment monitoring, historical equipment performance, inventory management/control and parts tracking ("Spare parts are an integral part of the repair process; therefore, you need to keep a tight control on your spare parts inventory. One benefit of better inventory control is having the right spare parts on hand. With a CMMS tracking "parts used" versus "parts on had" it's easy to ensure you are prepared for any planned task.")

- Katzel, Maintenance Management Software (1987; cited in PTO-892, September 26, 2005, reference u2), teaches a plurality of commercially available equipment maintenance management systems and methods wherein the systems comprise identification/analysis of equipment repair symptoms (Pages 7, 7, 12), equipment repair history analysis (Pages 8, 12, 14, 15), identifying the worst equipment ("Features include a mechanism for instantly listing the 12 worst equipment items by repair cost, work order activities, labor hours or down time.", Page 17), tracking repair part usage (Pages 7, 12, 13) and tracking repair costs (Pages 11, 12, 18).

- Wang, Service Parts Logistics (1998), teaches a system and method for optimizing the depth and range (mix and level) of spare parts in a supply chain network.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott L. Jarrett whose telephone number is (571) 272-7033. The examiner can normally be reached on Monday-Friday, 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hafiz Tariq can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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1/24/07

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